Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of

Petition Of Suite 12 Group For Amendment Of Part 21 Of The Commission's Rules To Allocate Spectrum For, And To Establish Other Rules And Polices Regarding, Multichannel Local Distribution Service In The 27.5-29.5 GHz Band	)	RM-7872

To: The Commission

REPLY OF THE SUITE 12 GROUP

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SUMMARY

None of the comments or oppositions filed in connection with Suite 12's petition in any diminishes or disparages Suite 12 technological achievements. Indeed, virtually every party that filed comments or oppositions to Suite 12's petition praised Suite 12's MLDS technology.

Only three parties oppose Suite 12's petition none of whom raise any meritorious challenges. For example, it is ironic that Video/Phone alleges that "Suite 12 has failed to appreciate the benefits its technology can bring to the public" and yet Video/Phone is only interested in seeing Suite 12's MLDS technology used for one narrow application -- "video telecommunications service." Suite 12's petition expressly contemplates this service and a myriad of other services; it would be short-sighted and, frankly, detrimental to the public, to limit MLDS as narrowly as proposed by Video/Phone.

The Wireless Cable Association's comments would have the Commission postpone this proceeding because Suite 12 supposedly has failed to provide any test data to prove MLDS is a feasible technology. WCA conveniently ignores the report produced by the David Sarnoff Laboratories and attached to Suite 12's petition labeling it a "theoretical analysis." The Sarnoff Report is a complete technical assessment of MLDS produced by one of the most prestigious laboratories in this country. Furthermore, the Commission's rules do not require data of the type WCA seeks in

order for the Commission to initiate a rulemaking. Moreover, WCA's concerns about patent technology are misplaced.

Harris' opposition is based on its proposal made in 1991 that the Commission channelize the 28 GHz band and make that band available for assignment to private radio as well as to common carrier point-to-point licensees. Suite 12 has previously demonstrated that neither such a channelization plan nor such use of the 28 GHz band is in the public interest.

Harris' comments propose two new plans which Harris believe would permit MLDS users and point-to-point microwave users to coexist. Suite 12 demonstrates how Harris' plans will not work without stifling MLDS use of the 28 GHz band. Suite 12 advocates that the Commission resolve the coexistence issue by permitting point-to-point users to use the 28 GHz band on a secondary basis.

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REPLY OF THE SUITE 12 GROUP

The Suite 12 Group ("Suite 12"), by its attorneys, hereby replies to the comments and oppositions to its above-referenced petition for rulemaking ("petition"). In its petition, Suite 12 requested that the Commission reallocate the 28 GHz band and initiate a rulemaking to permit the introduction of Multichannel Local Distribution Service ("MLDS") in that band. The 28 GHz band is currently allocated to common carrier point-to-point use and has been fallow since its original allocation in 1959. Suite 12's petition demonstrated that MLDS will benefit the public by enabling unique combinations of one-way and two-way video, voice, and data applications to be provided.

Eight entities filed informal comments in support of Suite 12's petition.[1/] These entities are microwave engineers,

[1/] It is perhaps significant to note that no telephone company or other common carrier opposed a reallocation of the 28 GHz band from common carrier to MLDS use. Likewise, no cable television (footnote continued)

venture capitalists, and corporations that have witnessed demonstrations of Suite 12's MLDS technology and have applied to the Commission to offer this technology on a waiver basis.[2/] Virtually all of these entities agree that MLDS: offers superior quality compared to MMDS, SMATV and cable television systems;[3/] can compete with telephone services;[4/] provides innovative two-way data services;[5/] offers efficient spectrum use due to non-interfering adjacent cells;[6/] and is environmentally[7/] and economically sound.[8/]

(footnote continued from previous page)
company opposed MLDS' ability, inter alia, to introduce "a new and needed multichannel video service...in competition with cable television and other video delivery and distribution services." See Hye Crest Management, Inc., Memorandum Opinion and Order, 6 FCC Rcd. 332 (1991)("Hye Crest Order") at para. 3. That order granted Suite 12's affiliate, Hye Crest, a waiver to offer a one-way video service in New York; this service is the prototype for MLDS.

2/ See, e.g., Informal Comments of Trontech, Inc. (dated Jan. 15, 1992).

3/ See e.g., Informal Comments of Alliance Associates (dated Jan. 15, 1992).

4/ See, e.g. Informal Comments of Matthews, Woodbridge and Collins (dated Jan. 15, 1992).

5/ See, e.g., Informal Comments of Dan Reiss (dated Jan. 15, 1992).

6/ See, e.g., Informal Comments of Bruce G. McNeill (dated Jan. 15, 1992).

7/ See e.g., Informal Comments of Matthew, Woodbridge and Collins (dated Jan. 15, 1992).

8/ See, e.g., Informal Comments of Darrin Development Group (dated Jan. 15, 1992).

As will be demonstrated below, none of the formal comments or oppositions filed against the petition in any way diminishes the merits of Suite 12's petition or technology. To the contrary, virtually every party that filed comments or oppositions to the petition expressly acknowledged and/or praised Suite 12's MLDS technology. For example, the Wireless Cable Association, Inc. ("WCA") stated "MLDS could prove a godsend to the wireless cable industry."[9/] Similarly, Video/Phone Systems, Inc. ("Video/Phone") stated:

> ...Video/Phone must applaud Suite 12 for its technological achievement in developing equipment capable of providing 'last mile' communications services in the long-fallow 28 GHz band. The technology pioneered by Suite 12 offers a unique vehicle for providing, in the words of the David Sarnoff Research Center, '[t]wo way transmission of audio, video, and high speed data...enabl[ing] the consumer to enjoy a diversity of communications.' While...Video/Phone disagrees with the regulatory regime that Suite 12 has proposed for the 28 GHz band, that disagreement should not distract from Suite 12's technical achievement.[10/]

I. Reply to Video/Phone Comments

Video/Phone's comments are replete with mischaracterizations and misstatements about Suite 12's petition. Perhaps the most blatant example is its assertion that MLDS is nothing but a substitute cable television service.[11/] Given the numerous instances in which the Suite 12 petition describes MLDS as

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9/ WCA Comments at 3.

10/ Video/Phone Comments at 1-2.

11/ Id. at 2.

encompassing voice and data service in addition to video,[12] it is intellectually dishonest for Video/Phone to characterize Suite 12's proposal so narrowly.[13] Contrary to Video/Phone's assertions, Suite 12's petition contemplates a flexible regulatory regime, responsive to market demand and encompassing all manner of video, voice, and data service applications.

As a purported justification for its characterization, Video/Phone notes that Suite 12's proposal calls for the Commission to require an MLDS licensee to offer 49 channels of video service. This is true; Suite 12's proposed rule section 21.1011 does propose to require an MLDS licensee to deliver 49 channels of video service throughout the service area. However, Suite 12's proposal merely follows the Commission's lead in this regard. Recent orders, such as the Hye Crest Waiver Order,[14]

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[12] See e.g., Petition at 2, 3-4, n.8, 6, n.24, 16-18, 19, n. 41.

[13] Such a limited reading of Suite 12's petition can perhaps be explained by the fact that Video/Phone has now filed a petition for rulemaking to use Suite 12's technology to provide "video telecommunications services." Suite 12 will not address the substance of Video/Phone's petition unless and until the Commission places it on public notice. Suite 12 notes that the Suite 12's proposed rules already address virtually everything contained in the Video/Phone petition. Indeed, Video/Phone's proposed service is just a subset of MLDS. Therefore, it is doubtful that comments on the Video/Phone petition will add to the Commission's knowledge regarding how best to allocate the 28 GHz spectrum. Nevertheless, if the Commission wants to expend additional resources on Video/Phone's petition, Suite 12 urges the Commission to act expeditiously so as not to delay the introduction of MLDS service to the public.

[14] Hye Crest Order at para. 24.

and the Wireless Cable Orders,[15] make clear that the Commission is extremely interested in promoting competition to the cable television industry. Suite 12 believes its proposal to be in step with the Commission's desire to foster competition in the video marketplace. Suite 12 believes itself to be in good company in suggesting that a video service component be part of the service mix every MLDS licensee should provide.

It is ironic that Video/Phone alleges that "Suite 12 has failed to fully appreciate the benefits its technology can bring to the public"[16] and yet Video/Phone is only interested in offering one narrow application of Suite 12's MLDS technology -- "video telecommunications service."[17] Clearly, it is Video/Phone that has failed to appreciate what Suite 12 has proposed and the capabilities of Suite 12's technology.

Suite 12 is well aware that its MLDS technology is capable of providing video telecommunications services[18] and has, in

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[15] See note 37 infra.

[16] Video/Phone Comments at 2. The Commission will find it interesting to note that Video/Phone's principals have filed waiver requests to use Suite 12's MLDS technology to provide video television service in Chicago and apparently in Cleveland. See e.g., Evanston Transmission Company, File No. 12268-CF-P-91 (filed June 7, 1991). Perhaps Video/Phone's principals hope to hedge their bets in case the citizens of Chicago and Cleveland prefer MLDS video services to video telecommunications service.

[17] Video/Phone Comments at 3. By this term, Video/Phone means "videoconferencing, telecommuting, telemedicine and education." Id.

[18] For example, the patent covering Suite 12's MLDS technology states "the system provides for a variety of two-way communications services including...digital two-way

(footnote continued)

fact, demonstrated such capability to the principals of Video/Phone.[19] Indeed, Suite 12's petition expressly includes such video telecommunications services as videoconferencing.[20]

To limit the use of the MLDS technology to such a narrow application, as proposed by Video/Phone, is short-sighted and, worse, will deprive the public of the unique combinations of other one-way and two-way video, voice, and data applications that MLDS is capable of offering. As Suite 12 proposed in its petition, the Commission would better serve the public interest by treating MLDS technology as merely a transport service, like satellite service, capable of offering a myriad of applications, rather than insisting that the technology be limited to only one application, as proposed by Video/Phone.

(footnote continued from previous page)
transmissions, special video teleconferencing...." Likewise, Suite 12's experimental licenses include authority to provide similar services. See e.g. Suite 12 Group, File No. 1988-EX-PL-91 (filed May 13, 1991; granted Nov. 7, 1991).

[19] Beginning in March 1990, Messrs. Foster and Franco and their technical consultants witnessed numerous demonstrations of the multiple channel transmission with simultaneous two-way video teleconferencing and audio communication. They also engaged in several technical discussions with Suite 12 regarding this technology of Suite 12's. (Indeed, the principals of Video/Phone executed agreements with Suite 12 promising not to disclose Suite 12's technology). These activities were part of Messrs. Foster and Franco's attempt to purchase part of Suite 12 and Hye Crest. The transaction was never consummated. However, it is fair to say that Messrs. Foster and Franco, at one time, thought highly enough of Suite 12, Hye Crest, and the technology owned by these companies to want to purchase them.

[20] See, e.g., Suite 12 Petition, Appendix B (Sarnoff Report) at 84, and p. 19 and 20.

II. Reply to WCA Comments

While expressly acknowledging the public benefits possible from Suite 12's technology,[21] WCA claims that Suite 12 has not produced test results and, therefore, WCA questions whether Suite 12's technology is viable.[22] Conveniently, WCA dismisses the Sarnoff Report attached to the petition as a "theoretical analysis."[23] Suite 12's technology has been thoroughly tested and demonstrated at the Sarnoff Laboratories and the Sarnoff Report is based upon the test results of such demonstrations.[24] WCA has not challenged the validity of the Sarnoff Report nor does it support its characterization of it as merely a "theoretical analysis" with anything but that bald assertion.

WCA's insistence on seeing test data is not supported by FCC precedent; the Commission has never required WCA's requested level of data before creating a new service. WCA's request for test data appears to have emanated solely from a statement in the Hye Crest Order in which the Commission noted that it would be appropriate to initiate a rulemaking once the service was

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21/ WCA Comments at 3.

22/ Id. at p. 4.

23/ Id. WCA also fails to concede the inherent market viability of MLDS. For example, Suite 12's video television MLDS service can be delivered at approximately half the price, and with better picture quality, than most cable television systems. With these advantages, significant market penetration by MLDS appears likely.

24/ See e.g. Sarnoff Report at vi ("All aspects of Suite 12's cellular system have been demonstrated at Sarnoff.") Demonstrations of the system are now in New York.

"actually implemented and subject to the rigors of the marketplace."[25/]

Clearly, the quoted language is dicta and was not meant to contradict the Commission's rules which only require the description of the "facts, views, arguments, and data deemed necessary to support a petition for rulemaking."[26/] Suite 12 believes that the Sarnoff Report eloquently and clearly demonstrates that its technology is viable. It is ludicrous for WCA to suggest that the Commission cannot proceed to a rulemaking based on Suite 12's petition and the record in this proceeding.

Moreover, WCA is gravely mistaken about Hye Crest's progress in constructing a precursor MLDS system in New York pursuant to its waiver.[27/] To take advantage of technical advances in millimeter wave technology that did not exist when Hye Crest first filed its waiver application in 1988, Hye Crest filed for an extension of time within which to construct its facility. That request was granted on January 2, 1992 and extended the construction deadline to July 3, 1992.[28/] Although Hye Crest now has an additional six months within which to construct, it expects to be in full compliance with the terms of the Hye Crest

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[25/] Hye Crest Order at para. 18.

[26/] 47 C.F.R. §1.401(c).

[27/] WCA Comments at 2.

[28/] Radio Station Authorization, File No. 10655-CF/MP-92 (appeared on Public Notice January 29, 1992 in Report No. D-628-A).

Order within the next few weeks.[29] Indeed, 24 channels are already operational and initial test transmissions indicate that the picture quality exceeds Hye Crest's original expectations.

WCA is also mistaken in stating that Suite 12's proposed rules do not address the issue of eligibility.[30] Suite 12 refers WCA to Suite 12's proposed rule section 21.1000 which squarely addresses the issue of MLDS license eligibility.

Moreover, contrary to WCA's assertion,[31] Suite 12 does not believe that technology licensing is a relevant subject for proposed or final rules. Aggrieved parties have existing, effective, and efficient remedies available to them in fora other than the Commission. Thus, the Commission properly should put its scarce resources to providing relief available in other fora. Indeed, the Commission's legal authority to require compulsory patent licensing or otherwise regulate such licensing or royalty practices appears circumscribed.[32]

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[29] Pursuant to that order, Hye Crest will certify that its 24 channel facility has been constructed, it is ready to operate, and that the provision of one-way video service to customers is ready to commence. See Hye Crest Order at para. 28.

[30] WCA Comments at 5-6. WCA also states that Suite 12's petition does not address selection criteria. Suite 12 declined to do so because at the time it filed it was flexible regarding the selection criteria for MLDS licensee.

[31] See id at 6.

[32] See Appendix A at 3-5.

Likewise, WCA's concerns about potential misuse of Suite 12's patent are wholly unwarranted.[33/] Suite 12 has demonstrated its willingness to license its technology by liberally issuing such licenses. To date, Suite 12 has issued over 50 licenses of its technology.[34/] Suite 12's behavior is typical of most patent holders; the more licensees, the more royalties -- i.e., it is in every patent holder's self interest to grant patent licenses liberally. Furthermore, if Suite 12 was interested in being a monopoly provider of MLDS and restricting access to its technology, it would not have initiated a rulemaking proposing that the Commission authorize two MLDS licensees to operate in each market or favoring the most expansive eligibility feasible for MLDS licensees. Thus, by word and by deed, Suite 12 has already demonstrated its desire to license its technology liberally and equitably.

Technology licensing issues are best left to the market. The Commission should consider intervention in this area only if a problem arises and then only after a great deal of deliberation. No such problem exists and thus any intervention by the FCC would be premature.

[33/] WCA Comments at n. 12. Contrary to WCA's assertion, Suite 12's petition to deny cited in that footnote did not threaten to institute litigation against "all 28 GHz technologies dissimilar to Suite 12's" but was limited instead to one company that attempted to utilize Suite 12's technology in circumvention of Suite 12's patent rights. The company subject to the petition to deny has since accepted Suite 12's technology and has settled matters amicably with Suite 12.

[34/] Indeed, a number have been issued to MMDS entities represented by WCA.

And finally, Suite 12's petition makes clear that all qualified entities should be eligible to be MLDS licensees.[35/] Accordingly, Suite 12 does not oppose WCA's desire that wireless cable operators become MLDS licensees.[36/] However, Suite 12 does take issue with WCA's comment that the Commission ought to "set-aside" spectrum at 28 GHz to be used exclusively by wireless cable operators.[37/] WCA offers no justification, nor can it, for why wireless cable operators should warrant such preferential treatment here when the Commission only recently overhauled the rules governing three separate services to foster wireless cable service.[38/]

III. Reply to Harris Opposition.

Harris' opposition to Suite 12's petition is premised upon its own proposal that the Commission channelize the 28 GHz band and make that band available for assignment to private radio as well as to common carrier point-to-point licensees.[39/] As Suite 12 has previously demonstrated, Harris' proposal is not in the

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35/ Proposed rule section 21.1000; Petition at 20.

36/ See WCA Comments at n. 11.

37/ Id.

38/ Amendment of Parts 21, 43, 74, 78 and 94 of the Commission's Rules Governing Use of the Frequencies in the 2.1 and 2.5 GHz Bands, Report and Order, 5 FCC Rcd. 6410 (1990); Second Report and Order, Gen. Docket Nos. 90-54 and 80-113, FCC No. 91-302 (rel. Oct. 25, 1991); Order on Reconsideration, Gen. Docket Nos. 90-54 and 80-113 (rel. on October 25, 1991).

39/ See RM-7722 (appeared on public notice May 15, 1991).

public interest and should not be allowed to prevent the introduction of MLDS.[40/]

Harris' opposition makes two new proposals in an attempt to allow shared use of the band between MLDS and point-to-point services. Specifically, Harris urges the Commission (1) to limit MLDS assignments to one half of the 28 GHz band and to propose the adoption of the channelization plan for that band recommended by the CCIR, or (2), if the Commission allocates the entire band for MLDS, to still propose the adoption of the CCIR channelization plan to permit point-to-point access to the band in areas where there is one or no MLDS licensee.

Although Suite 12 appreciates Harris' attempt to develop a strategy that would allow coexistence between MLDS and point-to-point users in the 28 GHz band, Suite 12 has concerns with several aspects of Harris' proposal. First, limiting MLDS use to half of each proposed band in the manner proposed by Harris will destroy the viability of MLDS. By separating the MLDS spectrum into two bands, the bandwidth of MLDS receivers would need to be 1500 MHz rather than 1000 MHz.[41/] This will impose an enormous and unnecessary cost penalty on MLDS licensees without any real justification. Moreover, unless MLDS licensees are licensed on 1000 MHz of contiguous spectrum, they will not have sufficient

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[40/] Suite 12 filed an opposition to Harris' petition on June 14, 1991 and reiterated its opposition in its rulemaking petition. Petition at n. 38. Harris filed a reply to Suite 12's opposition on July 2, 1991.

[41/] The standard bandwidth for satellite video receivers, which Suite 12 intends to employ, is 1000 MHz (950 to 1950 MHz).

spectrum to offer a meaningful service in competition with cable television and anticipated fiber optic services. In addition, contrary to Harris' assumptions, it is unlikely that two operators can operate at the same 28 GHz frequency on a primary basis without interfering with one another.

These adverse consequences are particularly unwarranted given that four frequency bands other than 28 GHz are already allocated for short-haul point-to-point microwave use and, according to the Commission's own conclusion, none of those bands appear close to saturation.[42/] In contrast and contrary to Harris' opposition,[43/] the 28 GHz band is the only band

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42/ See Hye Crest Order at 334, para. 23. For example, the 18 and 23 GHz bands can provide for the existence of over 14,000 full duplex microwave point-to-point transmitters in any 3 mile radius. Sarnoff Report at 120. Clearly there is near infinite capacity in the bands above 18 GHz to suite any point-to-point application. In addition, the 39 GHz frequency band may be more suitable than 28 GHz for short haul point-to-point communication links. Cable or fiber optic point-to-point links could also be used to connect cellular transmitters, the market that Harris seeks to serve.

43/ Harris mistakenly characterizes MLDS as "primarily a video distribution service" and consequently is incorrect in its assertion that another allocation for video services is not warranted. As described above, Suite 12 has proposed that MLDS provide two-way voice and data service in addition to video service. For example, even if each MLDS licensee offers 49 video channels, there is still 1000 MHz of bandwidth remaining to be able to simultaneously offer nearly 325 full duplex video teleconferencing (T1) in a cell or, according to the Sarnoff Report, 50,000 simultaneous telephone conversations within one cell. The actual amount and type of voice or data service will be determined by the cell within the PSMA area. For example, a financial district may require more data and video teleconferencing services than a suburban cell.

All of the alternative frequency bands mentioned by Harris for MLDS use are for point-to-point use only except the MMDS and (footnote continued)

adequately suited for MLDS use.[44/]

Second, the Commission should not adopt a specific channelization plan either for point-to-point use or for MLDS use in this band. With respect to point-to-point use, as Suite 12 demonstrated in its opposition to Harris' petition, channelization of the 28 GHz band is likely to stifle the development of MLDS operations. The propagation features in the 28 GHz band limit microwave links to very short distances. The same atmospheric attenuation that restricts the length of microwave links also allows the re-use of spectrum at fairly close distances. One key feature of MLDS is that frequencies may be re-used at distances as close as 6 to 8 miles. That is only feasible, however, if a licensee is licensed across an entire metropolitan area and is able to engineer a network that re-uses frequencies in an efficient and effective manner. The licensing of individual links, as proposed by Harris, would be inconsistent with this approach. It would deprive MLDS licensees of the ability to design a complete network and would forfeit the efficiencies that would be attainable in such an environment.

(footnote continued from previous page)
DBS bands. The MDS bands are very much limited by the line of sight problem, the inability to repeat the signal, small number of channels, large antennas, and the use of AM which is interference and multipath prone. DBS is not available and is not a solution to city dwellers since most receivers are blocked by large buildings and the requirement of relatively large antennas. The large DBS footprint prevents local programming and advertising. DBS performance in England is quite questionable and at this time the satellite is primarily used as a programming source for cable systems.

[44/] Petition at 7-10.

With respect to MLDS use, rather than adopting a specific channelization plan, the Commission should award each MLDS licensee a block of spectrum and allow the licensee to subchannelize it in any manner that satisfied the licensee's marketing, technical, and engineering needs.[45/] The resulting flexibility will allow MLDS to evolve in a market-oriented and innovative fashion.

Instead of adopting Harris' proposals, Suite 12 suggests an alternative approach that seems to enable MLDS and point-to-point users to coexist in the 28 GHz. Rather than split the 28 GHz band or adopt a channelization plan for that band, the Commission should permit point-to-point users to be licensed anywhere on the 28 GHz band using any bandwidth but on a secondary basis to MLDS licensees.[46/] Specifically, point-to-point licensees should be permitted to operate in the 28 GHz band on any basis in compliance with the applicable FCC rules provided that they cease

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[45/] Petition at 24-25; proposed rule section 21.1001. The Commission's decision regarding channelization in the satellite area is precedent for this type of approach. See Amendment of Parts 2 and 22 of the Commission's Rules Relative to Cellular Communications Systems, Report and Order, 61 RR 2nd 165 (1986), recon. denied., 62 RR 2nd 1329 (1987), further recon. denied., 66 RR 2nd 1351 (1989), aff'd sub nom. Aeronautical Radio Inc. v. FCC, 68 RR 2nd 1387 (1991); Amendments of Parts 2, 22, and 25 of the Commission's Rules to Allocate Spectrum for, and to Establish Other Rules and Policies Pertaining to the Use of Radio Frequencies in a Land Mobile Satellite Service for the Provision of Various Common Carrier Services, Second Report and Order, 62 RR 2nd 48 (1986), clarified, 62 RR 2nd (1987), recon. denied., 66 RR 2nd 1365 (1989).

[46/] See Petition at n. 23.

operations if they cause harmful interference to any MLDS licensee.

IV. Conclusion

Given the absence of meritorious challenges to Suite 12's petition for rulemaking, the Commission should act expeditiously to reallocate the 28 GHz band for MLDS by issuing a Notice of Proposed Rulemaking incorporating Suite 12's proposed rules. As the Commission has made clear, the integration of voice, data, and video applications, such as is envisioned by MLDS, will serve the public interest.[47/] Moreover, the expeditious introduction of MLDS is in keeping with the Commission's statutory mandate to "encourage the provision of new technologies."

Respectfully submitted,

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47/ See, e.g., Telephone Company-Cable Television Cross-Ownership Rules, Further Notice of Proposed Rulemaking, CC Docket No. 87-266 (released Nov. 22, 1991) at para. 7, 14.

CERTIFICATE OF SERVICE

I, Cynthia Forrester, of Ginsburg, Feldman and Bress, do hereby certify that true copies of the foregoing Reply of the Suite 12 Group were mailed this 30th day of January, 1992, by first-class United States mail, postage prepaid, to the following:

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APPENDIX A

IS/WP1-

12/4/89

PROPRIETARY STANDARDS IN ADVANCED TELEVISION

It is likely that all of the proposed Advanced Television systems incorporate some proprietary technology and intellectual property in the form of patents and/or trade secrets. At least some of the proponents may be unwilling to contribute this intellectual property to the public domain. Moreover, it seems likely that the U.S. public interest would be better served by widespread licensing of ATV technology to multiple TV camera, transmitter and receiver manufacturers, than by tightly restricted licensing. However, the Commission is without authority to require "compulsory licensing" or to otherwise regulate the licensing and royalty practices associated with patents. Consequently, at the same time the proponents are deciding on their strategies for licensing their technology, the Commission should be deciding on a strategy for dealing with ATV proprietary technology. It may be possible, for example, for the Commission to consider patent licensing offers as a decisional input when reaching a decision on an ATV system.

Proprietary Standards Are Common In High-Tech Products, and Licensing of Proprietary Technology Is Also Common

In high-tech product markets, it is common for *de facto* standards to incorporate proprietary technology. Nintendo video games, Postscript printer fonts and page description language, Ethernet local area networks and 80286/80386 microprocessors are all examples of products that have become standards, yet all are based on patents or trade secrets rather than being part of the public domain.

In a competitive marketplace, owners of proprietary technology typically decide on a licensing strategy that maximizes their benefits. They may decide to adopt a strategy of widespread licensing in order to make their product into a *de facto* standard. Or they may decide to limit licensing to only a few other manufacturers. Or they may decide to grant no licenses.

Nintendo has licensed perhaps twenty other companies to manufacture and sell video game cartridges using Nintendo's proprietary interface, but only Nintendo manufactures the base unit. Atari Games filed a $100 million antitrust lawsuit against Nintendo in December 1988.

Adobe Systems, Inc., which controls the page description language and proprietary font family called Postscript, licenses software developers and computer printer manufacturers to incorporate Postscript technology, but the license fees are said to be very high.

Xerox, Digital Equipment Corp. and Intel Corp., which developed the technology and own the patents for Ethernet local area data networks, were willing to grant licenses to use this technology to anyone for a small fee. Some elements of Ethernet technology may now be in the public domain.

Intel licenses multiple manufacturing sources for the 80286 microprocessor, but has declined to license second sources for its next-generation 80386 microprocessor.

The Polaroid family of film and cameras is recognized as the *de facto* standard for instant photography, yet only Polaroid manufactures these products. In a patent infringement case won by Polaroid, Kodak was forced out of the instant photography market.

While companies have been able to develop non-infringing clones of the IBM XT and AT computers, there are neither clones nor second sources of the Apple Macintosh computer.

In the land mobile communications area, Motorola owns a proprietary communications protocol that controls the assignment of radio channels to users who share a "trunked" radio system. Because of Motorola's general dominance of the land mobile radio market, this protocol has become a *de facto* standard. Motorola has declined to license other manufacturers to use this protocol. This was an issue in the FCC's land mobile trunking protocol proceeding, where the Commission declined to adopt a compatibility standard. While some comments supported a mandatory compatibility standard, others opposed it.[1]

Consequently, these example show that the normal working of the marketplace might result in widespread patent licensing, or it might result in restrictive licensing, or it might result in no licensing at all.

It is normally the case in any technology that no single entity holds all of the relevant patents. In such cases, rights holders generally are able to work out cross-licensing terms and other pri-

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[1]For example, APCO said: "APCO wants no part of penalizing an existing equipment developer by forcing the company to surrender its patents to benefit other companies who have made no contribution to the development process." Comments of Associated Public-Safety Communications Officers in Docket No. 88-441, October 17, 1988, at p. 31.

vate agreements among themselves for the licensing of technology to one another. This is likely to be the case with ATV as well. It is not certain, however, whether these cross-licensing agreements give ATV proponents the rights to sub-license the patents of others. For example, if the Zenith system were to be based in part on AT&T patents, and if the Commission chose the Zenith system as the ATV standard, then it is not clear whether other TV set manufacturers could deal with Zenith to obtain all the necessary patent licenses, or would have to deal with AT&T as well.

FCC Authority to Regulate Proprietary Standards is Limited

FCC authority in the area of patents and patent licensing is very limited. It has acted to protect rightsholders (for example, in the area of syndicated exclusivity), but has not acted to deprive rightsholders of their rights. The former FCC Chairman stated that protection of intellectual property rights has been one of the four basic principles guiding his chairmanship of the agency. Remarks of Dennis R. Patrick before the National Association of Broadcasters, May 2, 1989, at 6.

Patents are legal monopolies, and the patentee may choose whether or not to license others to use its patents (*Dawson Chemical Co. v. Rohm & Haas Co.*, 448 U.S. 176, 202 (1980); *SCM Corp. v. Xerox Corp.*, 645 F. 2d 1195, 1204 (2nd Cir., 1981), *cert. denied*, 455 US 1016 (1982)) and may charge the royalty amount that the leverage of the patent monopoly permits (*Brulotte v. Thys Co.*, 379 US 29, 33 (1964)). Moreover, the 100th Congress enacted an amendment to the patent laws providing that no patent owner may be found to have misused its patent by refusing to license or use it.[2]

Under the Constitution, intellectual property rights (like other forms of property) may not be taken by the government without just compensation. With respect to patents, the only government agencies that have the authority to compel the licensing of patents are the Nuclear Regulatory Commission and the Environmental Protection Agency, and in each agency the power is narrowly limited. In the case of the NRC, the licensing power is limited to special nuclear material, and the statutory authority includes a compensation scheme.[3] The EPA, under the Clean Air Act,[4] has limited authority to effect compulsory licensing of patented technology needed to ensure compliance with pollution standards. This would be done by EPA asking the

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[2]Patent and Trademark Office Authorization Act, Pub. L. No. 100-703, Sec. 201, amending 35 U.S.C. Sec. 271(2).

[3]42 U.S.C. 2183.

[4]42 U.S.C. 7608.

Attorney General to seek a court order compelling the licensing of a patent; the final decision and determination of compensation is left to the court.

U.S. patent policies are based on the idea that broad and potentially lucrative protection for intellectual property will stimulate invention and innovation. The underlying public policy of promoting technological progress is enshrined not only in the Patent Clause of the Constitution and in federal patent and trade secret law, but also in Section 7(a) of the Communications Act. But there is nothing in the Communications Act that gives the FCC any power over patent rights, authority to impose a compulsory licensing scheme for patents, or the power to appropriate patented technology.

The Commission itself has recognized that it has very limited, if any, authority in the patent area.[5] In discussing the possibility of an RCA patent monopoly in the development of color television, the Commission refused to eliminate RCA's patented system from consideration, nor did it suggest that it could compel licensing of the system. It merely noted that remedies were available under the antitrust laws, or the Commission could seek additional authority from Congress to deal with the specific antitrust problems of radio communications.[6]

In the case of telephone jacks and plugs, the Commission noted that AT&T patents could be used as a discriminatory and anti-competitive tool, but did not suggest mandatory licensing as a solution. Instead, it adopted the AT&T jack and plug designs on the condition that AT&T abide by its promise of voluntary licensing on a non-discriminatory basis.[7] Even this action was based on authority under Title 2 of the Communications Act not applicable to ATV.

Only once, in the case of Comsat, has the Commission actually proposed a mandatory patent licensing system. This would have covered patents resulting from work paid for out of INTELSAT funds. The FCC proposed it as a means of minimizing Comsat's competitive advantages over other U.S. companies due to its government-granted monopoly position in

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[5]In a April 21, 1988 memorandum from FCC Deputy Chief Engineer Bruce Franca to Irwin Dorros, Chairman of the Systems Subcommittee of the Advisory Committee on Advanced Television, an FCC patent policy is cited. The policy appears to be that the Commission will take "appropriate action" in cases where patent ownership obstructs the development of telecommunications services. However, it does not appear that this "policy" has ever been implemented, nor has the Commission's authority in this area ever affirmed in court.

[6]Amendment of Section 3.606 of the Commission's Rules and Regulations, 41 FCC 1, 41 (1950) at para. 126.

[7]Revision of Part 68 of the Commission's Rules, 62 FCC 2d 735, 738 (1976).